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Test 1455: Steiger Panther CP-1360 Diesel 12-Speed

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1455 — STEIGER PANTHER CP-1360 DIESEL
12 SPEED

POWER TAKE-OFF PERFORMANCE											
Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption			Temperature °F (°C)			Barometer inch Hg (kPa)			
		gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cooling medium	Air wet bulb	Air dry bulb				
MAXIMUM POWER AND FUEL CONSUMPTION											
Rated Engine Speed—Two Hours (PTO Speed—1002 rpm)											
334.33 (249.31)	2100	19.962 (75.564)	0.416 (0.253)	16.75 (3.299)	186 (85.4)	64 (18.1)	75 (24.1)	28.873 (97.501)			
VARYING POWER AND FUEL CONSUMPTION—Two Hours											
293.95 (219.20)	2173	18.243 (69.057)	0.433 (0.263)	16.11 (3.174)	180 (81.9)	66 (18.9)	75 (23.9)	..... .....		
0.00 (0.00)	2292	5.022 (19.010)	..... .....	..... .....	167 (75.0)	66 (18.9)	75 (23.9)	..... .....		
151.85 (113.23)	2242	11.740 (44.441)	0.539 (0.328)	12.93 (2.548)	172 (77.5)	66 (18.9)	76 (24.4)	..... .....		
335.30 (250.03)	2100	20.037 (75.848)	0.417 (0.253)	16.73 (3.296)	185 (85.0)	66 (18.9)	76 (24.2)	..... .....		
76.81 (57.28)	2268	8.508 (32.206)	0.772 (0.470)	9.03 (1.779)	168 (75.8)	66 (18.9)	76 (24.4)	..... .....		
224.90 (167.71)	2214	15.045 (56.952)	0.466 (0.284)	14.95 (2.945)	176 (80.3)	66 (18.9)	76 (24.2)	..... .....		
Av Av	180.47 (134.58)	2215 (49.585)	13.099 (4.308)	0.506 (0.308)	13.78 (2.714)	175 (79.3)	66 (18.9)	76 (24.2)	28.850 (97.422)		
DRAWBAR PERFORMANCE											
Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption		Temp. °F (°C)			Barom. inch Hg (kPa)	
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cool- ing med	Air wet bulb		Air dry bulb
Maximum Available Power—Two Hours 7th Gear											
289.91 (216.19)	15778 (70.18)	6.89 (11.09)	2099	3.18	19.850 (75.141)	0.477 (0.290)	14.60 (2.877)	181 (82.5)	64 (17.8)	65 (18.3)	28.960 (97.794)
75% of Pull at Maximum Power—Ten Hours 7th Gear											
232.20 (173.15)	12003 (53.39)	7.25 (11.68)	2196	2.52	16.813 (63.642)	0.505 (0.307)	13.81 (2.721)	176 (80.0)	59 (14.7)	64 (17.7)	28.793 (97.230)
50% of Pull at Maximum Power—Two Hours 7th Gear											
158.67 (118.32)	8002 (35.59)	7.44 (11.97)	2232	1.65	13.395 (50.705)	0.588 (0.358)	11.85 (2.333)	174 (78.9)	69 (20.6)	71 (21.4)	28.950 (97.760)
50% of Pull at Reduced Engine Speed—Two Hours 10th Gear											
159.24 (118.75)	8002 (35.59)	7.46 (12.01)	1311	1.60	10.759 (40.727)	0.471 (0.286)	14.80 (2.916)	175 (79.4)	65 (18.1)	65 (18.3)	28.955 (97.777)
MAXIMUM POWER IN SELECTED GEARS											
251.02 (187.19)	36123 (160.68)	2.61 (4.19)	2147	14.83	2nd Gear			176 (80.0)	60 (15.6)	60 (15.6)	28.930 (97.692)
277.28 (206.77)	32214 (143.30)	3.23 (5.19)	2098	8.82	3rd Gear			178 (81.1)	67 (19.4)	72 (22.2)	28.940 (97.726)
287.64 (214.49)	27057 (120.35)	3.99 (6.42)	2099	6.37	4th Gear			181 (82.5)	63 (17.2)	66 (18.9)	28.930 (97.692)
289.67 (216.01)	22276 (99.09)	4.88 (7.85)	2099	4.66	5th Gear			186 (85.3)	74 (23.3)	81 (27.2)	28.740 (97.051)
288.08 (214.82)	18505 (82.31)	5.84 (9.40)	2101	3.62	6th Gear			187 (85.8)	72 (22.2)	79 (26.1)	28.740 (97.051)
294.07 (219.29)	16004 (71.19)	6.89 (11.09)	2099	3.06	7th Gear			185 (85.0)	68 (20.0)	73 (22.8)	28.760 (97.118)
291.95 (217.70)	13152 (58.50)	8.32 (13.40)	2099	2.40	8th Gear			186 (85.3)	71 (21.7)	77 (25.0)	28.760 (97.118)
LUGGING ABILITY IN 7th GEAR											
Crankshaft Speed rpm				2099	1893	1682	1467	1255	1045		
Pull—lbs (kN)				16004 (71.19)	18275 (81.29)	19713 (87.69)	21093 (93.83)	21932 (97.56)	21673 (96.41)		
Increase in Pull %				0	14	23	32	37	35		
Power—Hp (kW)				294.07 (219.29)	301.43 (224.78)	287.48 (214.38)	267.38 (199.39)	237.37 (177.01)	195.50 (145.78)		
Speed—Mph (km/h)				6.89 (11.09)	6.19 (9.95)	5.47 (8.80)	4.75 (7.65)	4.06 (6.53)	3.38 (5.44)		
Slip %				3.06	3.54	4.03	4.35	4.66	4.51		
TRACTOR SOUND LEVEL WITH CAB							1700 RPM	1900 RPM	2100 RPM		
							dB(A)	dB(A)	dB(A)		
Maximum Available Power—Two Hours							73.5	73.5	74.5		
75% of Pull at Maximum Power—Ten Hours									76.0		
50% of Pull at Maximum Power—Two Hours									75.5		
50% of Pull at Reduced Engine Speed—Two Hours									73.5		
Bystander in 12th gear									93.5		

Department of Agricultural Engineering

Dates of Test: September 20 to October 9, 1982

Manufacturer: STEIGER TRACTOR, INC., 406 Main Avenue, Fargo, North Dakota 58126

FUEL, OIL AND TIME: Fuel No. 2 Diesel Cetane No. 46.6 (rating taken from oil company's inspection data) **Specific gravity converted to 60°/60° (15°/15°)** 0.8372 **Fuel weight** 6.971 lbs/gal (0.835 kg/l) **Oil** SAE 15W-40 **API service classification** CD, CC, SF **To motor** 8.148 gal (30.843 l) **Drained from motor** 6.239 gal (23.619 l) **Transmission and hydraulic lubricant** SAE 10 hydraulic transmission fluid **Final drive lubricant** SAE 85W-90 **Total time engine was operated** 59.0 hours.

ENGINE: Make Caterpillar Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** 90U18786 **Crankshaft** lengthwise **Rated rpm** 1700 to 2100 **Bore and stroke** 5.4" × 6.5" (137 mm × 165 mm) **Compression ratio** 14.5 to 1 **Displacement** 893 cu in (14636 ml) **Starting system** 12 volt **Lubrication pressure** **Air cleaner** two paper elements with aspirator **Oil filter** one full flow paper cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper cartridge and prestrainer **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: **Type** four wheel drive with duals **Serial No.** C36000506- **Tread width** rear 79" (2007 mm) to 136.4" (3464 mm) front 79" (2007 mm) to 136.4" (3464 mm) **Wheel base** 141.5" (3594 mm) **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 75.5" (1918 mm) Vertical distance above roadway 45.4" (1153 mm) Horizontal distance from center of rear wheel tread 0" (0 mm) to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled powershift **Advertised speeds mph (km/h)** first 2.4 (3.9) second 2.9 (4.7) third 3.4 (5.5) fourth 4.1 (6.6) fifth 4.9 (7.9) sixth 5.8 (9.3) seventh 6.8 (10.9) eighth 8.2 (13.2) ninth 9.6 (15.4) tenth 11.6 (18.7) eleventh 14.0 (22.5) twelfth 16.5 (26.5) reverse 3.0 (4.8), 5.1 (8.2) **Clutch** multiple wet disc hydraulically power actuated and operated by foot pedal **Brakes** dual caliper disc hydraulically operated by foot pedal and mechanically by hand lever **Steering** hydrostatic and articulated **Turning radius** (on concrete surface without brake) right 276" (7.01 m) left 276" (7.01 m) **Turning space diameter** (on concrete surface without brake) right 581.5" (14.77 m) left 581.5" (14.77 m) **Power take-off** 1002 rpm at 2100 engine rpm.

SUPPLEMENTARY TESTS
POWER AND FUEL CONSUMPTION AT 1900 RPM
POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption			Temperature °F (°C)				Barometer inch Hg (kPa)
		gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cooling medium	Air wet bulb	Air dry bulb		
MAXIMUM POWER AND FUEL CONSUMPTION									
Rated Engine Speed—One Hour (PTO Speed—907 rpm)									
344.37 (256.80)	1900	19.482 (73.747)	0.394 (0.240)	17.68 (3.482)	185 (84.9)	65 (18.5)	75 (23.7)	28.855 (97.439)	

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption			Temp. °F (°C)			Barom. inch Hg (kPa)
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cool- ing med	Air wet bulb	Air dry bulb	
Maximum Available Power—Two Hours 7th Gear											
296.06 (220.77)	17947 (79.83)	6.19 (9.96)	1900	3.83	19.599 (74.190)	0.461 (0.281)	15.11 (2.976)	183 (83.6)	67 (19.4)	68 (20.0)	28.955 (97.777)

MAXIMUM POWER IN SELECTED GEARS

268.21 (200.01)	36080 (160.49)	2.79 (4.49)	1940	14.90			3rd Gear	180 (81.9)	61 (16.1)	62 (16.7)	28.930 (97.692)
289.88 (216.16)	30619 (136.20)	3.55 (5.71)	1899	7.95			4th Gear	183 (83.6)	64 (17.8)	68 (20.0)	28.940 (97.726)
291.03 (217.02)	24970 (111.07)	4.37 (7.03)	1901	5.68			5th Gear	188 (86.4)	74 (23.3)	81 (27.2)	28.740 (97.051)
293.91 (219.17)	21017 (93.49)	5.24 (8.44)	1899	4.19			6th Gear	189 (86.9)	73 (22.8)	80 (26.7)	28.740 (97.051)
301.05 (224.49)	18186 (80.90)	6.21 (9.99)	1899	3.54			7th Gear	186 (85.3)	70 (21.1)	75 (23.9)	28.760 (97.118)
297.41 (221.78)	14864 (66.12)	7.50 (12.08)	1900	2.81			8th Gear	187 (86.1)	71 (21.7)	77 (25.0)	28.750 (97.084)
296.62 (221.19)	12462 (55.43)	8.93 (14.36)	1898	2.23			9th Gear	187 (85.8)	72 (22.2)	78 (25.6)	28.750 (97.084)

POWER AND FUEL CONSUMPTION AT 1700 RPM
POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption			Temperature °F (°C)			Barometer inch Hg (kPa)
		gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cooling medium	Air wet bulb	Air dry bulb	
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—One Hour (PTO Speed—812 rpm)								
332.83 (248.19)	1700	18.474 (69.932)	0.387 (0.235)	18.02 (3.549)	186 (85.6)	65 (18.1)	75 (23.7)	28.875 (97.507)

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption			Temp. °F (°C)			Barom. inch Hg (kPa)
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cool- ing med	Air wet bulb	Air dry bulb	
Maximum Available Power—Two Hours 7th Gear											
283.67 (211.54)	19287 (85.79)	5.52 (8.88)	1700	4.23	18.451 (69.846)	0.453 (0.276)	15.37 (3.029)	186 (85.6)	68 (19.7)	74 (23.3)	28.920 (97.659)

MAXIMUM POWER IN SELECTED GEARS

268.55 (200.26)	36034 (160.29)	2.79 (4.50)	1946	14.83			3rd Gear	181 (82.8)	62 (16.7)	64 (17.8)	28.930 (97.692)
274.24 (204.50)	32898 (146.34)	3.13 (5.03)	1702	9.40			4th Gear	183 (83.9)	66 (18.9)	70 (21.1)	28.940 (97.726)
280.33 (209.04)	27087 (120.49)	3.88 (6.25)	1700	6.22			5th Gear	189 (87.2)	74 (23.3)	81 (27.2)	28.740 (97.051)
284.11 (211.86)	22825 (101.53)	4.67 (7.51)	1701	4.82			6th Gear	187 (86.1)	73 (22.8)	80 (26.7)	28.740 (97.051)
290.08 (216.31)	19626 (87.30)	5.54 (8.92)	1703	4.03			7th Gear	188 (86.4)	70 (21.1)	75 (23.9)	28.760 (97.118)
289.88 (216.16)	16226 (72.17)	6.70 (10.78)	1702	3.22			8th Gear	188 (86.4)	71 (21.7)	76 (24.4)	28.760 (97.118)
285.20 (212.67)	13427 (59.72)	7.97 (12.82)	1698	2.56			9th Gear	188 (86.7)	72 (22.2)	78 (25.6)	28.750 (97.084)
284.16 (211.90)	11033 (49.08)	9.66 (15.54)	1701	1.90			10th Gear	188 (86.7)	72 (22.2)	79 (26.1)	28.740 (97.051)

TIRES, BALLAST AND WEIGHT

Rear Tires		With Ballast		Without Ballast	
—No., size, ply & psi (kPa)		Four 23.1-34; 8; inner 16 (110) outer 14 (95)		Four 23.1-34; 8; inner 16 (110) outer 14 (95)	
Ballast		None		None	
—Liquid (each)		None		None	
—Cast Iron (each)		None		None	
Front Tires		With Ballast		Without Ballast	
—No., size, ply & psi (kPa)		Four 23.1-34; 8; inner 16 (110) outer 14 (95)		Four 23.1-34; 8; inner 16 (110) outer 14 (95)	
Ballast		None		None	
—Liquid (each inner)		1930 lb (875 kg)		None	
—Cast Iron (each)		None		None	
Height of Drawbar		19.5 in (495 mm)		19.5 in (495 mm)	
Static Weight with Operator—Rear		16540 lb (7503 kg)		16540 lb (7503 kg)	
Front		22580 lb (10242 kg)		18720 lb (8491 kg)	
Total		39120 lb (17745 kg)		35260 lb (15994 kg)	

REPAIRS and ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 148°F (64.3°C). Seven gears were chosen between 15% slip and 10 mph (16.1 km/h).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1455.

LOUIS I. LEVITICUS
Engineer-in-Charge

K. VON BARGEN
W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers



Steiger Panther CP-1360 Diesel

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